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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,923	03/24/2004	Kimasaru Ura	91752	5172
24628	7590	08/21/2007		
WELSH & KATZ, LTD 120 S RIVERSIDE PLAZA 22ND FLOOR CHICAGO, IL 60606			EXAMINER CHAUDHRY, SAEED T	
			ART UNIT 1746	PAPER NUMBER
			MAIL DATE 08/21/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/807,923

Applicant(s)

URA, KIMASARU

Examiner

Saeed T. Chaudhry

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

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DETAILED ACTION

Applicant's amendments and remarks filed May 21, 2007 have been acknowledged by the examiner and entered. Claims 14-26 have been canceled and claims 1-13 are pending in this application for consideration.

Drawings

The drawings are objected to because in the specification character F1 on page 13 at line 3 is recited. This element is not present in the Figure 4. Reference characters mentioned in the description must appear in the drawings. See MPEP 608.02(O)5. Correction is required.

The drawings are objected to because the specification specify that the hole 10 is larger than the holes 11, 12, and 13 at page 10 in last paragraph. Figures 1 and 3 show same diameter of all the holes. Correction is required.

Claim Rejections - 35 USC § 112

Claims 3-4, 7-8 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 3, 4, 7 and 8 are confusing in the recitation of "respectively, are each set at substantially 90 degrees" because it is not clear that total of both the angles are 90 degrees or one of the angle is 90 degree.

Claim 13 is confusing, in the recitation of "along the longitudinal direction thereof" since it is not clear which longitudinal direction. Is it hose or the drain pipe.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 9, 12 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Masaru in view of JP-49-37403.

Masaru (4,687,011) discloses a method for cleaning drain pipe with a nozzle (6) connected to a hose (2) having a universal guide (43) linked to the front of the nozzle (6). High pressure water jetted obliquely rearward from the holes of the nozzle to propel the nozzle into the drain pipe and causing the hose to turn while the nozzle move spiral manner in the drain pipe. One of the hole is always in opposition to the inner surface of the drain pipe.

The cleaning of the drain pipe 46 is carried out by jetting the high-pressure water pressurized by the pump through the jet holes 8, 8a of the nozzle 6 mounted at the tip of the hose 2. The material adhered to the inside of the pipe is pulverized and removed by the high-pressure water jetted from the nozzle 6 in the aslant rearward direction of the nozzle 6, and at the same time, the nozzle 6 advances in the pipe by the propulsion force of the high-pressure water jetted from the nozzle 6 and the drawing-out of the high-pressure hose 2 by the manual or an automatic operation. In the lateral pipe 46a, as shown in FIG. 5, when the high-pressure hose 2 is rotated in the pipe, the snake wire 11 abuts the inner wall of the pipe by the rotation of the hose 2, and the direction of the nozzle 6 is changed, and as a result, the direction of the

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propulsion force by the high-pressure jet force of the nozzle 6 is tilted relative to the lateral cross section of the pipe 46a, and the nozzle 6 is revolved spirally along the inner peripheral wall of the pipe by the change of direction of the propulsion force. In the vertical pipe 46b, the high-pressure hose 2 is rotated at a constant speed, and the nozzle 6 is revolved spirally in the inner wall of the pipe by the drawing-out of the high-pressure hose 2, and the jet water jetted through a plurality of jet holes 8, 8a of the nozzle 6 cleans the inner wall of the pipe evenly with efficiency.

As described in the foregoing, to rotate the nozzle spirally in the lateral pipe 46a, it becomes obvious that it can be achieved by changing the direction of the propulsion force of the nozzle 6 according to the rotation of the high-pressure hose 2. In this embodiment, as means for changing the direction of the propulsion force of the nozzle according to the rotation of the high-pressure hose, the construction of tilting the snake wire 11 for α degrees relative to the center axial line of the nozzle 6 is employed. If the foregoing α degrees is the zero degrees like the head of the conventional high-pressure hose, namely, the snake wire 11 and the center axial line of the nozzle 6 are on a straight line, the direction of the nozzle 6, namely, the direction of the propulsion force by the high-pressure jet water is not changed even if the high-pressure hose is rotated so that the nozzle 6 is not revolved spirally in the lateral pipe 46a. Masaru fails to disclose that the universal guide is connected to the nozzle directly.

JP-49-37403 discloses a drain pipe cleaning method, wherein a universal guide is linked directly to a leading end of a nozzle (see figs. 1-4).

It would have been obvious at the time applicant invented the claimed process to directly install a universal guide to the nozzle as disclosed by JP-49-37403 into the process of Masaru for

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the purpose of generating movement solely by the terminal hose control and the propulsion force to increase the impact force on the drain pipe with the universal guide for removal of contaminants in the drain pipe. Further, it is well known in the art to use hot water for loosening the contaminated material from inside of the drain pipe. Therefore, one of ordinary skill in the art would use hot water to increase the cleaning efficiency.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masaru in view of JP-49-37403 and Shinzo.

Masaru and JP-49-37403 were discussed supra. However, the references fail to disclose that the certain injection hole has larger diameter than other holes.

Shinzo (JP-01-315379) disclose a nozzle having at least one large diameter hole than other injection holes to exert unbalance thrust on the nozzle to rotate inside the pipe.

High-pressure cleaning water passes through an inlet hole 4 from a cleaning hose 2, flows into a nozzle bearing 3, then passes through a shaft hole 11, and is injected from the injection holes 9a-9d. At this time, the nozzle 8 is rotated by the fluid energy caused by a vane 10 along with a nozzle guide member 12. In addition, unbalanced thrust for pressing the nozzle 8 on the inner wall 1a of a pipe 1 is produced by the difference in the diameter between the injection hole 9a and the injection hole 9c. Accordingly, the force of fluid energy exerted on the vane 10 and the unbalanced thrust caused by the injection hole are concurrently exerted on the nozzle 8, and the nozzle 8 rotates, moves along the inner wall 1a, or turns. As a result, the nozzle 8 is rotated inseparably from the inner wall 1a of even a large-diameter pipe 1. The nozzle 8 is moved forward by the driving force, since the injection hole 9 is inclined toward the inner wall 1a (see abstract).

It would have been obvious at the time applicant invented the claimed process to incorporate the cited nozzle of Shinzo into the process of Masaru for purpose of thrusting the nozzle into the drain pipe in a spiral manner to avoid the streaking effect on the interior of the drain pipe.

Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masaru in view of JP-49-37403, Shinzo and Folts et al.

Masaru, JP-49-37403 and Shinzo were discussed supra. However, the references fail to disclose different angles of the injection nozzles.

Folts et al (5,314,545) disclose a method for delivering high pressure velocity working liquid to an internal access opening for cleaning and removing thin cross section material. A nozzle having different angles with respect to the longitudinal axis of the nozzle.

It would have been obvious at the time applicant invented the claimed process to incorporate the cited nozzle of Folts et al into the process of Masaru to increase the area of the injection nozzle into drain pipe. Further, one of ordinary skill in the art would manipulate the angles of the injection holes with routine experimentations for efficient removal of the material from inside of the drain pipe and to increase the spiral movement.

Claims 5-8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masaru in view of JP-49-37403, Shinzo, Folts et al and Iida et al.

Masaru, Shinzo and Folts et al were discussed supra. However, the references fail to use mixture of liquid and gas.

Iida et al (5,408,991) discloses a method of cleaning a pipe with a mixture of liquid and gas. A cleaning scheme for supplying a cleaning solution such as tap water or a detergent in

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conduits to clean the conduits of the endoscope, a cleaning scheme for supplying a fluid mixture of a cleaning solution and a gas, i.e., a so-called two-phase (gaseous and liquid phases) flow is also known as a scheme for cleaning the conduits in the endoscope (see col. 3, lines 3-9).

It is well known in the art of cleaning the pipe to utilize mixture of air and water to increase the cleaning efficiency as disclosed by Iida et al. Therefore, it would have been obvious to include a mixture of water and air as disclosed by Iida et al into the process of Masaru to clean drain pipe and increase the cleaning efficiency.

Response to Applicant's Arguments

Applicant argued that figures 1, 3 and 4 have been corrected. But no new drawings are provided with the response submitted on May 21, 2007.

Applicant's arguments with respect to claims 1-13 have been considered but are deemed to be moot in view of the new grounds of rejection.

Applicant's amendment necessitated the new grounds of rejection. Accordingly, THIS ACTION IS MADE FINAL. See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saeed T. Chaudhry whose telephone number is (571) 272-1298. The examiner can normally be reached on Monday-Friday from 9:30 A.M. to 4:00 P.M.

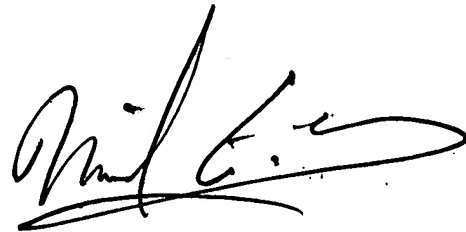
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Michael Barr, can be reached on (571)-272-1414. The fax phone number for non-final is (703)-872-9306.

When filing a FAX in Gp 1700, please indicate in the Header (upper right) "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communication with the PTO that are for entry into the file of the application. This will expedite processing of your papers.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (571) 272-1700.

Saeed T. Chaudhry
Patent Examiner

A handwritten signature in black ink, appearing to read 'Michael Barr', with a stylized, sweeping underline.

MICHAEL BARR
SUPERVISORY PATENT EXAMINER